## REMARKS

After the above-requested amendments, claims 13, 16-22, 24-33, 44, 47-48 and 50-52 are pending. Applicants thank the Examiner for allowing claims 19-22, 24-33, 44 and 50. For the reasons explained below, Applicants respectfully submit that all of the claims are now in condition for allowance.

### I. Response to Rejection of Claim 13

Claim 13 stands rejected under 35 USC 103(a) as unpatentable over Song et al. (US 6,163,356) in view of Kaneko et al. (US 6,433,842). Claim 13 has been amended to recite "performing an annealing process ... wherein the annealing process is performed immediately before depositing the third conductive layer." Support for the amendment is found in the specification on page 14 beginning at line 4 and extending to line 8. Applicants submit that none of the cited art discloses or suggests this newly recited feature of claim 13 and, accordingly, request that the rejection be withdrawn. The annealing process improves the contact properties, more particularly reduces the contact resistance between the "aluminum or aluminum alloy material" and the third conductive layer. Claims 16-18, 47-49 and 51-52 which depend directly, or through other claims, on claim 13 which is now in condition for allowance, are also in condition for allowance for at least the reason of dependency.

On page 3, beginning on line 16, of the outstanding office action, the Examiner opined that "Song discloses ITO layer 57 is formed directly contacting the material (Cr, Mo, Ta or Sb) of gate pad 15...". Also as shown in Song Figs. 8a-8f, and explained at col. 8, lines 11-26, there is no direct contact between ITO and the gate pad. Namely, aluminum is deposited on a transparent substrate as a gate pad, and then by using a metal such as chromium Cr, molybdenum Mo, tantalum Ta, or antimony Sb, a gate electrode 111, a gate line 113, a gate pad 115 are formed.

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And, on page 4, beginning on line 2, of the outstanding office action, the Examiner opined as follows:

> By forming the IZO layer 11 and the aluminum or aluminum alloy material layer 8 not directly contacting each other, Kaneko has overcome

the known problems associated with high contact resistance that occur when such layers were formed directly contacting each other [see col. 1, lines 30-35]. Thus, Kaneko expressly discloses that IZO (or ITO) has been known to form directly contacting with aluminum or aluminum alloy material in order to exhibit such high contact resistance. Therefore, it is understood that Kaneko discloses a first embodiment that shows an indium zinc oxide (IZO) not directly contacting aluminum or aluminum alloy material layer, and a second embodiment that shows an indium zinc oxide (IZO) directly contacting aluminum or aluminum alloy material layer.

As pointed out in Song beginning at col. 2, line 66 continuing to col. 3, line 2, the surface of a metal material containing aluminum suffers from the hillock problem. This problem is addressed in Song at col. 4, beginning at line 37 where it is stated: "As described above, layers using aluminum have a tendency to form hillocks on their surface. Therefore, metal material such as chromium (Cr), molybdenum (Mo), tantalum (Ta), or antimony (Sb) is deposited and patterned to form the gate line 13 and gate pad 15 over the low resistance gate line 13...". It is of course desirable to avoid the use of this additional layer.

In Applicants' invention according to claim 13, the TFT manufacturing method includes, among other things, "performing an annealing process ... immediately before depositing the third conductive layer." Accordingly, the invention of claim 13 permits direct contact between IZO and aluminum without incurring the hillock problem.

## III. Allowability of Claim 16-18, 47-49 and 51-52

Applicants have amended claim 13 which is now in condition for allowance. It follows that claims 16-18, 47-49 and 51-52 which depend on claim 13 are also in condition for allowance for at least the reason of dependency.

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## CONCLUSION

In light of the foregoing, all of the claims currently pending in the application are ready for allowance and Applicants respectfully request that the rejections be withdrawn, the claims allowed and the case passed to issue. Should the Examiner have any questions or concerns or care to discuss the application, he is requested to contact the undersigned at (408) 392-9250.

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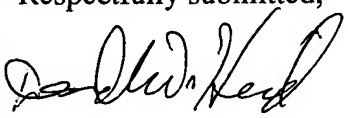
Respectfully submitted,



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